

Step 1: Determine the reason you would like to plant trees.

- Is it for wildlife habitat, timber production, wind protection, scenic features, multiple reasons? Give this a lot of thought; a thorough understanding of the reasons for planting trees will help you decide what species to plant and a planting layout.

Step 2: Select trees suitable to your soils and objectives.

- It's critical to plant trees that are suited to your soils or they will not grow well. Check the Dodge or Jefferson County soils book to determine the soils you have; the Land Conservation Department or DNR Forester can help with this. Also see the general listing of acceptable tree species for various soil types below.
- Consider potential animal damage. Oak and white pine may grow well in your soil, but if you are in an area with a high deer and/or rabbit population the trees will be heavily browsed. You may need to consider tree shelters or less appealing browse species like spruce and ash.
- Plan to order 600 to 900 trees per acre, depending upon species and expected future management techniques. For the purpose of the Conservation Reserve Program (CRP) the maximum number of trees allowed for planting is 800 trees per acre. For the purpose of the Managed Forest Law it is mandatory that landowners establish and maintain 600 trees per acre in tree plantations. I normally suggest planting 900 trees per acre; the spacing is 8 feet between rows and 6 feet between trees. This sounds like a lot, but in nature quality hardwood forests develop with 2000-4000 seedlings per acre. You are depending on a uniform spacing in the plantation to quickly shade out the grasses.
- Consider ordering a mixture of hardwoods and conifers that are well suited to your soils. Usually 1-2 year old hardwoods are nice sized trees and 2-3 year old conifers. Year-round shade produced by evergreens will help discourage the competing weeds much sooner than pure deciduous plantings.
- Tree species native to southern Wisconsin from local nurseries are recommended over non-native nursery stock from other parts of the country. Nursery stock from any other portion of the country with different climatic conditions may not be well suited to the local climate.
- It should be noted that some tree species are not allowed in CRP plantings. Please check with the local NRCS personnel or the local DNR Forester to determine what trees can be planted if enrolling land in CRP.
- Planting trees in narrow strips around or along grasslands or prairies is not recommended. Planting trees in these areas will create unnecessary edge habitat that will significantly increase small mammal and bird nest predation by raccoons, hawks, opossum, skunk, and brown headed cowbirds.

Somewhat Poorly to Poorly Drained Soils	Other soils
Trees	
Green Ash Red Maple Silver Maple Swamp White Oak Tamarack Northern White Cedar Black Ash	Northern Red Oak White Oak Bur Oak Sugar Maple Shagbark Hickory White Ash Aspen American Basswood Black Walnut White Pine White Spruce
Shrubs	
Red Osier Dogwood Silky Dogwood Highbush Cranberry Elderberry	Gray Dogwood Arrowwood Viburnum Juneberry Nannyberry Serviceberry Winterberry Ninebark Wild Plum Hawthorne

Step 3: Preparing the area for tree planting is the most critical step for success.

- Preparing the site for trees is commonly overlooked and is the biggest reason so many plantings fail! Hardwoods are more sensitive to weed competition than conifers. The field should be weed free and loose for good root penetration.
- Do not plant into hay or sod. The established roots of hay and/or grasses will be tough competition, taking away nutrients and moisture that could have been directed to your trees. White grubs are also a concern; they live in hay and sod fields feeding on roots. White grubs will kill your trees.
- Boxelder can also be a problem in your new plantation. Consider cutting all the boxelder adjacent to your planting area. The stumps should be treated with a chemical such as Chopper RTU, Crossbow, or Garlon 4 to discourage the trees from resprouting. Kill the seed bearing, female trees first. The best time to cut and treat boxelder is mid to late summer, the year prior to tree planting.

Ideal Site Preparation for hay or sod:

- **In fall**, clip the final cutting of hay or grass no later than September 1st. Allow the field to grow 10-12 inches of new growth then band spray glyphosate mixed with 2,4-D. If there is more than 1 white grub per 10 square feet, check with me before ordering trees.
- **In spring**, prepare a seed bed and plant 4 to 6 pounds of perennial rye grass per acre; rye grass will reduce weed competition, reduce soil erosion, and conserve moisture for your trees. Plant the trees and immediately band-spray over the rows with Princep or Simazine. Follow up with mowing as needed. The rye grass will grow 10-12 inches tall then go dormant around July.
- **Good site preparation for corn or bean fields need only follow the spring portion above.**

Step 4: Ordering your trees.

- There are several sources for obtaining high quality nursery stock at a reasonable rate.
- The Department of Natural Resources sells nursery stock to landowners interested in establishing forest plantations. These trees may not be purchased for the purpose of decorative landscaping around your yard, reselling the trees to potential buyers, or growing Christmas trees. The State requires a minimum order of 1,000 seedlings or the purchase of a shrub/windbreak packet. Tree order applications are distributed annually by the local DNR Forester; usually around the first week in October. Orders are filled on a first come first serve basis. Many of the hardwoods sell out within days of distributing the application.
- Private nurseries typically sell trees without restrictions or minimum orders. There are a number of private nurseries located throughout the state. To locate private nurseries check your local yellow pages, contact your local DNR Forester or contact the Wisconsin Nursery Association in Greenfield at (414) 529-4705. If you have access to the internet you can check a site provided by UW-Extension, the Wisconsin Nursery Directory located at <http://forest.wisc.edu/extension/publications/14.pdf>.

Step 5: Care of nursery stock before planting.

- It's best to plant your trees within 7 days of delivery. Keep the trees in a cool dark place below 50 degrees F.
- If you must store your trees more than 7 days, refrigerate the trees at 35-40 degrees F with high humidity. Check the boxes every 5-7 days to ensure the roots are moist.
- DO NOT store the trees immersed in water or temporarily plant them in your garden, you will destroy the fine root hairs.
- Some minor root pruning and culling of runt seedlings may be necessary before planting. Many of the hardwoods have huge roots and the conifers are quite long. Trimming the roots to 10-12 inches of length will help speed the planting process and promote a better planting job. It's important to prune with clean and sharp equipment.

Step 6: Planting your trees.

- The county Land Conservation Department has 2 tree planting machines available for lease. A planting machine can really speed the planting process up when you have 2,000 or more to plant. You must provide a 45+ HP tractor with a three-point hitch and the labor.
- Custom tree planters and machines are also available for hire, see the attached list.
- Planting the trees at the proper depth is critical. You must plant the seedlings with the root collar at the same depth or slightly deeper than the top of the soil.
- Layout access trails and waterways. Leave a minimum of 16 feet of width so the trees will not crowd out your trail in 20 years.

Step 7: Plantations need follow-up weed control.

- Dodge and Jefferson County soils are fertile and weed competition can be intense. Herbicides can help give your trees a boost. Herbicides can be applied in 2-4 foot wide bands directly over the rows of trees or broadcast sprayed over the entire area. The 1st application should be done immediately after the trees are planted, before the leaves start to grow. Repeat applications should be conducted annually as needed until the trees are taller than the surrounding vegetation; usually applied in early April after the frost melts from the ground but prior to leaf growth.
- There are many sources for getting spraying done. The county Land Conservation Department has a sprayer for rent. This is a small 55-gallon sprayer designed for band and broadcast spraying. A gasoline engine drives the pump and the entire unit is fastened to a trailer. You must provide the equipment to pull it, chemical, and labor. It is dedicated for the use of Oust, Simazine, Princep, Round-Up, Rodeo, and Accord.
- Custom herbicide applicators are also available, see the attached list of cooperators. Some custom tree planters include band spraying in their services.

What herbicides should you choose?

- Several herbicides are labeled for forestry applications. The most commonly used chemicals are Princep, Simazine, Pendulum and Oust.
- **Princep, Pendulum and Simazine** are pre-emergent herbicides, which means they are designed to kill weed seed, not established plants. Either chemical is most effective on bare soil, prior to spring growth. The chemicals will not affect your trees if applied after the trees are planted, the roots are not exposed, and the trees have not started growing leaves. Princep or Simazine alone could be applied at 3-4 pounds per acre. Always follow the label, there are many forms of these chemicals.
- **Oust** is a pre and early post-emergent herbicide so it will kill seed and existing small plants. Oust is not to be used over white cedar, tamarack, or red pine: It is best applied in combination with Simazine, Pendulum or Princep, annually applied directly over the trees until the trees are taller than the surrounding vegetation. This combination would be a very good choice immediately after planting the trees if minimal site preparation was completed. Oust is applied at 3/4-1 ounce per acre and the Princep or Simazine could be mixed in at 3 pounds per acre. **Oust will contaminate spraying equipment.** Do not use Oust in a tank you plan on spraying crops with unless the equipment is thoroughly cleaned with household ammonia (3% active ingredient per 100 gallons of water). Again, always follow the label.
- If weeds are a problem after the trees have leafed out there are a couple of chemicals that may be applied over the trees. If grass is a problem apply Sethoxidym (previously Vantage). This chemical must be applied before the grass goes to seed to be effective. If broad leaf control is necessary you may apply Transline.

USE PESTICIDES WISELY!!! ALWAYS READ THE ENTIRE PESTICIDE LABEL CAREFULLY, FOLLOW ALL MIXING AND APPLICATION INSTRUCTIONS AND WEAR ALL RECOMMENDED PERSONAL PROTECTIVE GEAR AND CLOTHING. CALIBRATE SPRAY EQUIPMENT TO APPLY CHEMICALS UNIFORMLY AND IN THE CORRECT QUANTITIES. CONTACT THE STATE DEPARTMENT OF AGRICULTURE FOR ANY ADDITIONAL PESTICIDE USE REQUIREMENTS, RESTRICTIONS OR RECOMMENDATIONS.

Reducing animal damage.

- Mowing between the rows of trees is the best method of reducing weed competition and animal damage. Rodent populations can build in tall grass and weeds, when food is scarce they will gnaw on your seedlings, killing many. If the fields are mowed, there is little cover and great opportunities for hawks and owls to hunt the fields. Mowing 3-4 times per year until the trees get 4-5 feet tall will sustain excellent tree survival and promote fast growth.
- Installing perch poles for raptors encourages predation on rodents.
- Tree shelter could be installed if rodent and deer damage is intense. Tree shelters are no substitute for mowing. Rodents will chew through the tubes if there is secure cover for them to survive.
- Plantations of less than 10 acres in size are extremely susceptible to excessive animal damage. If it is possible to plant larger areas to trees it is strongly recommended. Plantations of greater than 20 acres in size create the most benefits for wildlife because there is less edge habitat that is created in larger plantings.

